

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Application of: )  
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 GERSZBERG et al. ) Group Art Unit: 2121  
 )  
 Serial No.: Continuation of )  
 09/224,287, filed 12/31/98 ) Examiner: R. Patel  
 )  
 Filed: Concurrently herewith )  
 )  
 For: A FACILITY MANAGEMENT ) Attorney Docket No. 003493.00363  
 PLATFORM FOR A HYBRID )  
 COAXIAL/TWISTED PAIR LOCAL )  
 LOOP NETWORK SERVICE )  
 ARCHITECTURE )

**PRELIMINARY AMENDMENT**

Assistant Commissioner for Patents  
Washington, D.C. 20231

Sir:

Prior to examination on the merits thereof, the following amendments are respectfully submitted.

**IN THE SPECIFICATION:**

Please replace the text on page 1, lines 4 and 5, with the following:

This application is a continuation application of U.S. Application Serial No. 09/224,287, filed December 31, 1998, which is a continuation-in-part of U.S. Application Serial No. 09/001,422, filed December 31, 1997.

Please replace the paragraph beginning on page 8, line 11 with the following rewritten paragraph:

--The ISD 22 or IRG 22-1 (Fig. 1A, 1E) may be interconnected to various devices such as a videophone 130, other digital phones 18, set-top devices (not shown), computers 14, and/or other devices 15, 16 comprising the customer premise equipment 10. Per Fig. 1E, the IRG 22-1 is shown coupled with a plurality of analog lines 15-1 to 15-4 to a business data services interface 17, for example, a set of V. 35 interfaces, for providing various digital bandwidth services such as an 56 Kbps service 17-1, 64 Kbps service 17-2, ISDN service 17-3 and T1 (1.544 Megabps service) 17-4. An Ethernet link serves an Ethernet telephone 18-1 and the user's personal computer local area network including PC 14-1 provided via telephone house wiring. The user's television 19-1 and other coaxial cable fed devices are connected to CATV and enhanced services via in-house coaxial cable.--

THE CLAIMS:

Please cancel Claims 1-11 without prejudice or disclaimer, and enter the following new claims.

--12. (New) A telecommunications interface for communicating subscriber data including voice data, signaling data, and user data between a digital network, a digital loop carrier having an analog interface to connect telephones and a digital circuit connecting a telephone switch to other telephone switches, and a subscriber link to subscriber premises equipment (SPE), said interface comprising:

a controller;

a modem that modulates and demodulates the subscriber data to and from the subscriber link to generate a digital stream including the voice data, signaling data and user data;

a digital filter that separates the voice data from the digital stream,

said controller applying the voice data to the digital circuit when the signaling data indicates the voice data is to be transmitted by the digital circuit, and

said controller applying the voice data to the digital network when the signaling data indicates the voice data is to be transmitted over the digital network; and

a DTMF generator;

said interface being connected to a switched network requiring the transmission of DTMF tones for calls to be routed through the switched network, and

said DTMF generator generating DTMF tones in response to said signaling data indicated that the call is to be transmitted through the switched network.

13. (New) A telecommunications interface for communicating subscriber data including voice data, signaling data, and user data between a digital network, a digital loop carrier having an analog interface to connect telephones and a digital circuit connecting a telephone switch to other telephone switches, and a subscriber link to subscriber premises equipment (SPE), said interface comprising:

a controller; and

a modem that modulates and demodulates the subscriber data to and from the subscriber link to generate a digital stream including the voice data, signaling data and user data;

a digital filter that separates the voice data from the digital stream,

wherein said controller applying the voice data to the digital circuit when the signaling data indicates the voice data is to be transmitted by the digital circuit,

wherein said controller applying the voice data to the digital network when the signaling data indicates the voice data is to be transmitted over the digital network, and

wherein said controller communicates with a network controller of the digital network and generates a message to the network controller requesting reallocation of resources of the digital network in response to an end of transmission of the voice data.

14. (New) An interface as in claim 13, wherein the message is a request for increased bandwidth at a priority lower than a priority assigned for a voice circuit of the digital network.

15. (New) A central office interface between a multiple access link to a subscriber premises and a local exchange carrier network:

digital loop carrier circuitry with a digital interface to permit access to a digital backplane of the digital loop carrier circuitry; and

a controller with at least one modulator/demodulator applies data corresponding to multiple voice call sessions from said link to the digital interface, and applies data corresponding to the multiple voice call sessions from said digital interface to the link;

the multiple access link being established over a single twisted pair metallic interface.

16. (New) An interface as in claim 15, wherein said controller is configured to add a new call session to the multiple voice call sessions in response to signaling data received through the digital interface.

17. (New) An interface as in claim 16, wherein the new call session corresponds to the same called number as at least another call of the multiple voice call sessions, whereby multiple call sessions to a same called number are enabled.

18. (New) An interface as in claim 15, wherein:  
said controller is connected to another digital network; and  
said controller adds a new call to the multiple voice call sessions in response to signaling data received through the another digital network.

19. (New) An interface as in claim 15, wherein:  
said controller is connected to another digital network; and  
said controller adds a new call session to the multiple voice call sessions in response to signaling data received through the link, said controller further configured routing selectively the new call session through the another digital network in response to signaling data received through the link.

20. (New) An interface as in claim 16, wherein the new call session is a voice call session.

21. (New) An interface as in claim 16, wherein the new call session is a multimedia call session.

22. (New) An interface as in claim 19, further comprising:

a data storage unit;

said controller further routing the new call session in response to signaling data and subscriber data corresponding to the call session, the subscriber data indicating services permitted for a calling party corresponding to the call session.

23. (New) A method of connecting telecommunication call sessions from multiple stations at a subscriber premise, comprising the steps of:

generating signaling data at a one of said stations;

receiving said signaling data over a multiple access link at a network interface;

in response to receiving said signaling data at said network interface, transmitting the signaling data over one of a digital loop carrier and a digital network in response to a called number in the signaling data;

allocating a channel in a multiple access link to the network interface to communicate user data over the link, the user data corresponding to the signaling data;

deallocating the channel responsively to a termination of the user data.

24. (New) A method as in claim 23, wherein the user data includes voice data.

25. (New) A method as in claim 24, wherein said step of allocating includes allocating a channel providing 100% priority.

26. (New) A method of connecting telecommunication call sessions from multiple stations at a subscriber premise through a multiple access link, said method comprising the steps of:

providing a digital interface to a backplane of a digital loop carrier;

generating signaling data at one of the stations; and

receiving the signaling data over the multiple access link at a network interface;

in response to receiving the signaling data at the network interface, applying the signaling data to the digital interface to create an appearance of a POT connected through a line card connected to said backplane.

27. (New) A method as in claim 26, further comprising the steps of:

generating further signaling data at another one of said stations;

receiving said further signaling data over said multiple access link at the network interface;

setting up a call session for transmission through a virtual channel of a digital network connected to the network interface;

said step of setting up a call including transmitting a request on a signaling channel of the digital network for bandwidth required for a call corresponding to the signaling data; and

applying subsequent voice data in a virtual channel responsively to a result of said step of transmitting a request.

28. (New) A method of connecting telecommunication call sessions from multiple stations at a premise through a multiple access link, comprising the steps of:

- providing a digital interface to a backplane of a digital loop carrier;
- generating signaling data at a one of the stations;
- receiving the signaling data over the multiple access link at a network interface;
- generating DTMF tones and applying the DTMF tones to a telecommunications switch in response to the signaling data and connecting a call initiated at the one of the stations through a channel opened up in said step of applying said DTMF tones;
- generating further signaling data at another one of the stations;
- receiving the further signaling data over the multiple access link of the network interface;
- setting up a call session for transmission through a virtual channel of a digital network connected to the network interface;
- said step of setting up a call including transmitting a request on a signaling channel of the digital network for bandwidth required for a call corresponding to the signaling data; and
- applying subsequent voice data in a virtual channel in response to a result of said step of transmitting a request.

29. (New) A method of connecting telecommunication call sessions from multiple stations at a subscriber premise through a multiple access subscriber link, said method comprising the steps of:

- generating an indication of an initiation of a voice-dialing call at one of said stations;



receiving said indication through said link at a network interface;  
upon receipt of said indication at the network interface, opening a channel in a digital network having a server;  
transmitting voice data corresponding to the called number through the channel to the server;  
receiving signaling data at the network interface, transmitted by the server in response to a receipt, the signaling data being responsive to the voice data; and  
connecting a call session at the network interface in response to the signaling data.

30. (New) A method as in claim 29, wherein said step of connecting includes placing a call at the network interface through a local exchange carrier (LEC) network separate from the digital network and channeling the call session through the link.

31. (New) A method as in claim 30, wherein the LEC network is an analog network.

32. (New) A method as in claim 29, wherein the call session is a voice call session.

33. (New) A method as in claim 29, wherein the call session is a multimedia call session.--

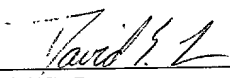
**REMARKS**

The specification of the present application has been amended to correct an informality found on page 8, line 11, by replacing "(Fig. 1C, 1E)" with --(Fig. 1A, 1E) -- to thereby conform the written description to the drawings.

Further, Claims 2-12 have been canceled without prejudice or disclaimer, and new Claims 12-33 have been submitted for examination. Favorable consideration is respectfully requested.

Respectfully submitted,

BANNER & WITCOFF, Ltd.

  
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David S. Lee  
Reg. No. 38,222

Date: March 8, 2002  
1001 G Street, N.W.  
Eleventh Floor  
Washington, D.C. 20001-4597  
(202) 508-9100

MARKED-UP VERSION TO SHOW THE CHANGES MADE

The paragraph beginning on page 8, line 11 has been amended as follows:

The ISD 22 or IRG 22-1 [(Fig. 1A, 1C)] (Fig. 1A, 1E) may be interconnected to various devices such as a videophone 130, other digital phones 18, set-top devices (not shown), computers 14, and/or other devices 15, 16 comprising the customer premise equipment 10. Per Fig. 1E, the IRG 22-1 is shown coupled with a plurality of analog lines 15-1 to 15-4 to a business data services interface 17, for example, a set of V. 35 interfaces, for providing various digital bandwidth services such as an 56 Kbps service 17-1, 64 Kbps service 17-2, ISDN service 17-3 and T1 (1.544 Megabps service) 17-4. An Ethernet link serves an Ethernet telephone 18-1 and the user's personal computer local area network including PC 14-1 provided via telephone house wiring. The user's television 19-1 and other coaxial cable fed devices are connected to CATV and enhanced services via in-house coaxial cable.

THE CLAIMS

Claims 1-11 have been canceled without prejudice or disclaimer, and new Claims 12-33 have been submitted for examination as follows:

--12. (New) A telecommunications interface for communicating subscriber data including voice data, signaling data, and user data between a digital network, a digital loop carrier having an analog interface to connect telephones and a digital circuit connecting a telephone switch to other telephone switches, and a subscriber link to subscriber premises equipment (SPE), said interface comprising:

a controller;

a modem that modulates and demodulates the subscriber data to and from the subscriber link to generate a digital stream including the voice data, signaling data and user data;

a digital filter that separates the voice data from the digital stream,

said controller applying the voice data to the digital circuit when the signaling data indicates the voice data is to be transmitted by the digital circuit, and

said controller applying the voice data to the digital network when the signaling data indicates the voice data is to be transmitted over the digital network; and

a DTMF generator;

said interface being connected to a switched network requiring the transmission of DTMF tones for calls to be routed through the switched network, and

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a controller; and

a modem that modulates and demodulates the subscriber data to and from the subscriber link to generate a digital stream including the voice data, signaling data and user data;

a digital filter that separates the voice data from the digital stream,

wherein said controller applying the voice data to the digital circuit when the signaling data indicates the voice data is to be transmitted by the digital circuit,

wherein said controller applying the voice data to the digital network when the signaling data indicates the voice data is to be transmitted over the digital network, and

wherein said controller communicates with a network controller of the digital network and generates a message to the network controller requesting reallocation of resources of the digital network in response to an end of transmission of the voice data.

14. (New) An interface as in claim 13, wherein the message is a request for increased bandwidth at a priority lower than a priority assigned for a voice circuit of the digital network.

15. (New) A central office interface between a multiple access link to a subscriber premises and a local exchange carrier network:

digital loop carrier circuitry with a digital interface to permit access to a digital backplane of the digital loop carrier circuitry; and

a controller with at least one modulator/demodulator applies data corresponding to multiple voice call sessions from said link to the digital interface, and applies data corresponding to the multiple voice call sessions from said digital interface to the link;

the multiple access link being established over a single twisted pair metallic interface.

16. (New) An interface as in claim 15, wherein said controller is configured to add a new call session to the multiple voice call sessions in response to signaling data received through the digital interface.

17. (New) An interface as in claim 16, wherein the new call session corresponds to the same called number as at least another call of the multiple voice call sessions, whereby multiple call sessions to a same called number are enabled.

18. (New) An interface as in claim 15, wherein:  
said controller is connected to another digital network; and  
said controller adds a new call to the multiple voice call sessions in response to signaling data received through the another digital network.

19. (New) An interface as in claim 15, wherein:  
said controller is connected to another digital network; and  
said controller adds a new call session to the multiple voice call sessions in response to signaling data received through the link, said controller further configured routing selectively the new call session through the another digital network in response to signaling data received through the link.

20. (New) An interface as in claim 16, wherein the new call session is a voice call session.

21. (New) An interface as in claim 16, wherein the new call session is a multimedia call session.

22. (New) An interface as in claim 19, further comprising:

a data storage unit;

said controller further routing the new call session in response to signaling data and subscriber data corresponding to the call session, the subscriber data indicating services permitted for a calling party corresponding to the call session.

23. (New) A method of connecting telecommunication call sessions from multiple stations at a subscriber premise, comprising the steps of:

generating signaling data at a one of said stations;

receiving said signaling data over a multiple access link at a network interface;

in response to receiving said signaling data at said network interface, transmitting the signaling data over one of a digital loop carrier and a digital network in response to a called number in the signaling data;

allocating a channel in a multiple access link to the network interface to communicate user data over the link, the user data corresponding to the signaling data;

deallocating the channel responsively to a termination of the user data.

24. (New) A method as in claim 23, wherein the user data includes voice data.

25. (New) A method as in claim 24, wherein said step of allocating includes allocating a channel providing 100% priority.

26. (New) A method of connecting telecommunication call sessions from multiple stations at a subscriber premise through a multiple access link, said method comprising the steps of:

providing a digital interface to a backplane of a digital loop carrier;

generating signaling data at one of the stations; and

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in response to receiving the signaling data at the network interface, applying the signaling data to the digital interface to create an appearance of a POT connected through a line card connected to said backplane.

27. (New) A method as in claim 26, further comprising the steps of:

generating further signaling data at another one of said stations;

receiving said further signaling data over said multiple access link at the network interface;

setting up a call session for transmission through a virtual channel of a digital network connected to the network interface;

said step of setting up a call including transmitting a request on a signaling channel of the digital network for bandwidth required for a call corresponding to the signaling data; and

applying subsequent voice data in a virtual channel responsively to a result of said step of transmitting a request.



28. (New) A method of connecting telecommunication call sessions from multiple stations at a premise through a multiple access link, comprising the steps of:

- providing a digital interface to a backplane of a digital loop carrier;
- generating signaling data at a one of the stations;
- receiving the signaling data over the multiple access link at a network interface;
- generating DTMF tones and applying the DTMF tones to a telecommunications switch in response to the signaling data and connecting a call initiated at the one of the stations through a channel opened up in said step of applying said DTMF tones;
- generating further signaling data at another one of the stations;
- receiving the further signaling data over the multiple access link of the network interface;
- setting up a call session for transmission through a virtual channel of a digital network connected to the network interface;
- said step of setting up a call including transmitting a request on a signaling channel of the digital network for bandwidth required for a call corresponding to the signaling data; and
- applying subsequent voice data in a virtual channel in response to a result of said step of transmitting a request.

29. (New) A method of connecting telecommunication call sessions from multiple stations at a subscriber premise through a multiple access subscriber link, said method comprising the steps of:

- generating an indication of an initiation of a voice-dialing call at one of said stations;

receiving said indication through said link at a network interface;

upon receipt of said indication at the network interface, opening a channel in a digital network having a server;

transmitting voice data corresponding to the called number through the channel to the server;

receiving signaling data at the network interface, transmitted by the server in response to a receipt, the signaling data being responsive to the voice data; and

connecting a call session at the network interface in response to the signaling data.

30. (New) A method as in claim 29, wherein said step of connecting includes placing a call at the network interface through a local exchange carrier (LEC) network separate from the digital network and channeling the call session through the link.

31. (New) A method as in claim 30, wherein the LEC network is an analog network.

32. (New) A method as in claim 29, wherein the call session is a voice call session.

33. (New) A method as in claim 29, wherein the call session is a multimedia call session.--